

Claim Amendments

1-3. (canceled)

4. (currently amended) A lateral high-voltage junction device for over voltage protection of an MOS circuit comprising:

a substrate having a first junction region separated from a second junction region by a substrate region, wherein the substrate region is defined by a uniformly doped region extending from the first junction region to the second junction region;

an MOS gate electrode overlying the substrate region and separated therefrom by a gate oxide layer;

dielectric sidewall spacers adjacent to opposing sides of the MOS gate electrode and overlying the uniformly doped substrate region;

~~wherein the substrate region is defined by a uniformly doped region of the substrate between the first junction region and second junction region; and~~

wherein the first junction region comprises an anode and the second junction region comprises a cathode, and wherein the anode and the cathode have an opposite conductivity type.

5. (previously presented) The device of claim 4, wherein the substrate region separating first and second junction regions has a lateral width of about 200nm or less.

6. (currently amended) The device of claim 4, wherein the device is ~~configured~~ configurable to support a voltage of greater than about 2.5 volts is across the first and second junction regions.

7. (previously presented) The device of claim 4, wherein the gate electrode is electrically coupled to the substrate.

8-10. (canceled)

11. (currently amended) An input protection circuit comprising:

a voltage supply node and a ground node;

an MOS circuit coupled to the voltage supply node and to the ground node;

a transistor coupled to the voltage supply node and to the ground node in parallel with the MOS circuit and having a first junction region coupled to the voltage supply node, a second junction region coupled to the ground node, and a junction-free substrate region between the first and second junction regions, an MOS gate electrode overlying the substrate region and separated therefrom by a gate oxide layer, and dielectric sidewall spacers adjacent to opposing sides of the MOS gate electrode and overlying the junction-free substrate region;

~~wherein the transistor functions as a junction diode such that the first junction region comprises a cathode and the second junction region comprises an anode;~~

a compensating diode coupled to the voltage supply node and to the ground node in parallel with the MOS circuit and the transistor;

~~wherein the substrate region comprises a junction-free semiconductor region between the first and second junction regions; and~~

wherein the anode second junction region and the substrate region comprise a semiconductor material of the same conductivity type;

~~an MOS gate electrode overlying the substrate region and separated therefrom by a gate oxide layer; and~~

~~dielectric sidewall spacers adjacent to opposing sides of the MOS gate electrode and overlying the substrate region.~~

12. (previously presented) The input protection circuit of claim 11 wherein the transistor comprises a plurality of 1 to N forward biased diodes connected in series, such that the first junction region of the first diode is coupled to the voltage supply node and the second junction region of the Nth diode is coupled to the ground node.

13-21. (canceled)

22. (new) A circuit comprising:

an MOS circuit coupled to a voltage supply node and a ground node; and
a lateral high-voltage junction device for over voltage protection of the
MOS circuit, the device coupled to the voltage supply and ground node in parallel
with the MOS circuit, the device comprising:

a substrate having a first junction region separated from a second
junction region by a uniformly doped substrate region extending from the
first junction region to the second junction region;

an MOS gate electrode overlying the uniformly doped substrate
region and separated therefrom by a gate oxide layer; and

dielectric sidewall spacers adjacent to opposing sides of the MOS
gate electrode and overlying the uniformly doped substrate region.

23. (new) The circuit of claim 22 including a compensating diode coupled to
the voltage supply and ground node in parallel with the MOS circuit and the
lateral high-voltage junction device.

24. (new) The circuit of claim 22, wherein the first junction region and the
substrate region comprise semiconductor materials of different conductivity
types, the first junction being coupled to the voltage supply node, and the second
junction and the substrate region comprise a semiconductor material of the same
conductivity types, the second junction being coupled to the ground node.

25. (new) The circuit of claim 22, wherein the first junction region comprises
an anode and the second junction region comprises a cathode, and wherein the
anode and the cathode have an opposite conductivity type.